Abstracts

Integrated Digitally Controlled 6-Bit Phase Shifter, 4-Bit Attenuator, and T/R Switch Using Multifunction Self Aligned Gate Process

H. Singh, D. Willems, I. Bahl, J. Naber, T. Kelly, V. Sadhir, J. Jorgenson, G. Studtmann, R. Sadler, M. Drinkwine, A. Geissberger, J. Grzyb, E. Griffin and C. Andricos. "Integrated Digitally Controlled 6-Bit Phase Shifter, 4-Bit Attenuator, and T/R Switch Using Multifunction Self Aligned Gate Process." 1991 Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest 91.1 (1991 [MCS]): 39-42.

A monolithic microwave and digital integrated circuit (MMDIC) consisting of a 12-bit serial-to-parallel converter, 6-bit phase shifter, 4-bit attenuator, and SPDT switch has been designed and fabricated using the standard Multifunction Self-Aligned Gate (MSAG) process, with a full functional yield of over 27%. By combining digital circuitry with these microwave control circuits, the number of control lines is reduced from 16 to 3, allowing simplification of the subsystem architecture.

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